

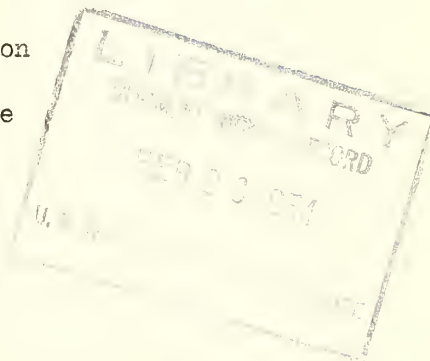
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Report of the
EIGHTH SOUTHERN PASTURE AND FORAGE CROP
IMPROVEMENT CONFERENCE

Agricultural Experiment Station
of the
Alabama Polytechnic Institute
Auburn, Alabama
April 17-19, 1951
Duncan Hall



"Forage - Food - Defense"

Conference Chairman

G. B. Killinger, Agronomist, University of Florida
Gainesville, Florida

Monday, April 16

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Tuesday, April 17

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Registration began the evening of April 16 and was completed the following morning.

Tuesday, April 17, 1951.

8:30 A.M. Opening Session Duncan Hall
G. B. Killinger, Chairman

The Chairman called the Conference to order at 8:30 A.M. Visitors and members were introduced. The program proceeded as planned.

8:45 A.M. - Address of Welcome, by Ralph B. Draughon, President,
Alabama Polytechnic Institute.

In welcoming the group to Auburn, Pres. Draughon pointed out that "big changes for the betterment of the people of our state have been brought about due to scientific research and teaching in agriculture. No greater or more important impact has been made on the lives of our people than the development here of a fine school of agriculture and Extension Service for the dissemination of the fruits of research to the people of Alabama". He called attention to the fact that Auburn is a separate land grant college which has been operating under its own board of trustees since 1872. It is a technical university carrying a broad and varied program having ten professional schools, a graduate school and three reserve officer training corps branches. In conclusion, President Draughon commended Dr. Funchess, Director Emeritus, for having done such a good job of developing a sound, constructive agricultural program, one that has been of real value to the farmers of Alabama.

9:00 A.M. - The Agricultural Experiment Station System in Alabama,
by Dr. E. V. Smith, Director.

The chronological development up to the present Experiment Station system in Alabama was reviewed by Dr. Smith. In 1883, eleven years after the college was founded, a farm was purchased for agricultural work. At this time the professors did the work on the farm. Auburn is located on the fall line between Piedmont and coastal plain soil areas. The interest in field work increased and in 1911 State funds were appropriated for cooperative work in other parts of the state. Five substations and a number of experimental fields were established by an Appropriation Act of 1927. Five additional fields were added a few years later. Meanwhile, the acreage at the main station has expanded to between 3500 and 4000 acres. The name, location and the acreage of the present substations is as follows:

<u>Substation</u>	<u>Post Office</u>	<u>Acreage</u>
Black Belt	Marion Junction	1100
Chilton Area Hort.	Clanton	145
Gulf Coast	Fairhope	800
Lower Coastal Plain	Camden	2500
North Alabama Hort.	Cullman	160
Piedmont	Camp Hill	1400
Sand Mountain	Crossville	500
Tennessee Valley	Belle Mina	755
Upper Coastal Plain	Winfield	736
Wiregrass	Headland	500
Plant Breeding Unit	Tallassee	670

In addition to the above, there are five forest units over the state. According to Dr. Smith, the farmer interest in these varied programs is keen and between 50 and 60 thousand visited the stations this past year. Well organized groups of less than 100 farmers are preferred at the various substations.

9:15 A.M. - The Development of Pasture and Forage Crop Research in Alabama, by Dr. M. J. Funchess, Director Emeritus.

Dean Funchess reviewed the changes in Alabama agriculture which directly led to the change of emphasis in their research programs to include pasture and forage crops. In the early days farmers devoted their entire time to the production of cotton and corn. Cotton provided the only income. At that time a "live at home" program was practiced by farmers in which little cash was needed. Over-production in cotton resulted in price and acreage controls, beginning in the thirties. As a direct result of this change, farm labor has been leaving the South and the number of farms has been decreasing. At the same time, outlets for cotton were declining and synthetics were making steady inroads into what had been the cotton textile field. During this time changes in the living standards of farm families created a greater demand on the head of the farm family for cash for automobiles, radios, telephones, electricity, etc.. The better farmers were forced into an expanded program to meet these demands.

Three factors: the price and outlook for livestock products were good and apparently increasing; a livestock program would use acres taken out of cotton; and the fact that the livestock program fits the reduced labor supply, forced the farmers into a livestock program.

In the meantime, our research program had been revaluated, resulting in the expansion of the research program covering forage crops and pastures. The first phase of pasture research consisted of studies of large numbers of grasses and legumes, alone and in various combinations, in small plots. The adaptation of these various species to soil types and

the cultural requirements of the species was studied in this manner. In the second phase, the more promising species were studied alone or in mixtures in large plots under actual grazing. The objective of this second phase is to determine the best grass and legume combinations, methods of management, and the economics of production. In conclusion, Dr. Funchess stated that we don't know enough about pasture management and that a better legume is needed.

10:00 A.M. - Management Units in the Alabama Experiment Station System, by Charles F. Simmons, Associate Director.

The objective of the management units in the Alabama system is to apply and evaluate promising leads secured from research on small plots. Recommendations based on the results from such plot studies relative to adaptation, fertilization, seed mixtures and management are frequently too difficult to apply directly and must be tested on a farm scale. Properly planned and well managed farm units having a well balanced labor requirement are essential to secure maximum values.

At the present time 18 farm management units are in operation over the state. The units are of two types. One type is self-contained, in which labor and necessary equipment is on the farm. On these units custom combining or other such operations are used if available in the community. The second type is usually located near or adjacent to a substation or experimental field. These units are farmed with labor and equipment from the substation and charged to the unit. Income from the sale of fluid milk, livestock and cotton are credited to the unit in agreement with the local market values.

The 18 management units cover the main soil areas of the state. While it is not possible to test a great variety of management methods, the units do provide us with the opportunity of testing what appears to be the better farming methods on a farm basis under controlled conditions. The location and main components of some of the various management units are as follows:

Sand Mountain Substation

- (1) Cotton - corn - hog
- (2) Cotton - poultry
- (3) Dairy - cotton unit

Tennessee Valley Substation

- (4) Cotton - hog - beef cattle
- (5) Steer unit

Upper Coastal Plain Substation

- (6) Dairy - poultry
- (7) Cotton - dairy

Cont'd.

Blackbelt Substation

- (8) Grade A dairy
- (9) Cotton - dairy

Gulf Coast

- (10) Grade A dairy
- (11) Hog - cotton

Wiregrass Substation

- (12) Beef cow unit

10:30 A.M. - Field Trip, Main Station, Dr. D. G. Sturkie,
Agronomist, in charge.

The group traveled by car from Duncan Hall through a portion of the Ag campus to the Main Experiment Station plots. At the first stop a tall fescue-reseeding crimson clover pasture was observed. The first terrace of this pasture was seeded to Kentucky 31 in the fall of 1947. Alternate terraces were seeded to Ky. 31 and alta fescue in the fall of 1948. The crimson clover was seeded at the same time. The area was limed at the beginning and receives an annual application of 400 lbs. of 0-14-10 containing 10 lbs. of borax in August of each year.

The tour continued through a portion of the areas used by the Dairy and Animal Husbandry Departments. At the second stop, a Coastal Bermuda-reseeding crimson clover pasture was observed. In this 8-acre pasture Coastal Bermuda was sprigged in 4-foot rows in September of 1947 and the crimson clover seeded immediately afterwards. Liming and fertilization is the same as on the tall fescue pasture. In the summer of 1950 the area was divided into two 4-acre blocks. One area received 200 lbs of ammonium nitrate per acre after the crimson clover had matured seed. Both areas were grazed heavily during the summer and fall. The half receiving the additional nitrogen produced 109 pounds more beef or a total of 304 pounds, as compared to 195 pounds for the other pasture.

1:00 P.M. - Afternoon Tour, Piedmont Substation, Camp Hill, Alabama,
F. L. Mayton, Superintendent, in charge.

The group left Duncan Hall at 1:00 P.M. and traveled by car to the Piedmont Substation at Camp Hill, some 23 miles northwest of Auburn. Mr. F. L. Mayton met us at the station and discussed the program of the station with the group. The first two stops were on the cotton-dairy management unit. Because of low temperatures in November and February, winter grazing was limited to a few days in December and January. Summer grazing and hay is secured from kudzu, sericea lespedeza and Sudan grass. The Grade B dairy unit brings added income from the sale of milk in addition to that

from cotton. The cotton acreage is similar to that on other farms of the area. A pure stand of sericea was established on 25 acres of essentially abandoned land in 1946. Crimson clover was seeded in this field of sericea in the fall of 1948. During the spring and early summer of 1949 the stand of sericea was greatly reduced by the clover. The second crop of crimson clover, 1949-50, eliminated the sericea.

A beef production program on 100 acres of land only one year old was shown at the next stop. The unit, as planned, calls for 3-3¹ acres of grazing of hay crops per brood cow. Fall or early winter calving is practiced. Income is derived from the sale of grass fat calves, 6-7 months of age, weighing around 400 lbs, plus any surplus hay. Summer and fall grazing is secured from Bermuda grass, sericea lespedeza and some tall fescue and Dallis grass. Winter grazing is largely from crimson clover but some is also from oats and crimson clover and tall fescue. The unit is just getting under way.

At the hog unit we learned that crimson clover in winter and kudzu in summer are the primary ^{grazing} crops for hogs. Corn is the principal grain crop. Grain sorghums had failed on the field we observed. Corn following winter legumes supplemented with 50-60 lbs of N. produces from 50-60 bushels of corn on these soils.

7:30 P.M. - Evening Meeting, Mr. K. B. Roy, Agricultural Editor, Alabama Polytechnic Institute.

Before showing the film, "Farm Research in Alabama", Mr. Roy gave us background information into the development and utility of the film. The film portrayed many phases of the research under way and we the group a much better picture of the research activities at the Alabama Station.

8:00 P.M. - Group Discussion, "Improvement of Forage Plants", led by T. F. Rogers, Agronomist, Ala. Polytechnic Inst.

The improvement program under way with white clover was discussed by Dr. Gibson. Forage production, persistence and seed production are the main factors involved in the program. The importance of breeding for resistance to such diseases as Sclerotinia, pepper spot, Sclerotium rolfsii, and Rhizoctonia was stressed.

In the discussion relative to seed production in general, Dr. D. F. Beard, Head Agronomist, Division of Forage Crops and Diseases, USDA, reviewed the development of and progress being made in the Foundation Seed Stocks program. Seed stocks of Atlantic, Buffalo, Ranger and Narragansett alfalfa, Kenland and Midland red clover, and Climax lespedeza are being increased in this program.

Mr. F. J. Hely, from Australia (now taking graduate work at the University of Wisconsin), reported on the utilization of the annual medics in his country. Of the many annual medics, 12 are naturalized in Australia in the winter rainfall areas on alkaline soils. Barrel medic, Medicago tribuloides, is widely used and provides good summer sheep grazing. The sheep pick up and eat the pods and seed of this species. M. hispida does well in areas of lower winter rainfall. M. minima volunteers over wide areas and is particularly abundant on the less fertile soils. These three species, M. minima, M. tribuloides and M. hispida, are most important in that country.

Many interesting and informal discussions developed during this evening session. As the session drew to a close a number of the men expressed the thought that more time at the annual meetings should be allotted to discussions of this type. After considerable discussion of this subject, it was suggested that the equivalent of a full day of discussions of this type be included in the program for 1952. With regard to the nature of these discussions, it was suggested that the secretary canvass the members as to their desires in this regard.

Wednesday, April 18

8:00 A.M. - Field Trip to Plant Breeding Unit, Tallahassee, Ala.,
C. L. Kornegay, Superintendent, in charge.

At the Plant Breeding Unit at Tallahassee, breeding work with white clover, and regional variety tests of clovers and winter legumes were observed. All material had been seriously damaged by cold and no appreciable differences were apparent between the different clover strains. Many lupine strains were killed 100%. A few plants of white lupines had escaped serious damage.

11:00 A.M. - Tour of Black Belt Substation, Marion Junction, Ala.,
K. G. Baker, Superintendent, in charge.

The tour through Autauga County enroute to the Black Belt Substation was of real interest to everyone. The numerous large and small fields of crimson clover in full bloom were spectacular and brought home to the group the importance of this species in the area.

A tour of the Black Belt Substation was made and the grade A and grade B dairy units discussed by Mr. K. G. Baker, Superintendent. Practically all of the white clover on the station had been killed by the severe winter. Mr. W. B. Kelly discussed results of fertilizer tests when measured in pounds of beef per acre. The forage systems used at the Black Belt Station

were discussed by Mr. Baker. The basis of the forage program was white clover and Dallis grass, supplemented by roughpeas and Johnson grass. Fescue is looking very promising as an additional winter grass crop.

Thursday, April 19.

10:00 A.M. - Tour of Tennessee Valley Substation, Belle Mina, Ala.,
Fred Stewart, Superintendent, in charge.

The systems of forage management and utilization in connection with the cotton, hog, and beef cattle(cow and calf) unit and the buy and sell steer unit were most interesting to the group in the tour of the Tenn. Valley Substation. Crimson clover and rye grass, the principal winter and spring forages, were furnishing considerable grazing. White clover and Ladino clover were being grown in association with both fescue and orchardgrass. Lespedeza sericea growing in combination with crimson clover is also used on these units.

1:30 P.M. - Business Meeting, G. B. Killinger, Chairman.

The first matter of business was the election of a new member of the Executive Committee. J. K. Leasure, of Tennessee, was nominated by R. C. Potts. Dr. Leasure was unanimously elected. Dr. Killinger announced the election by the Executive Committee of Hayden Rogers as Chairman for 1952. A change in the representative from Animal Husbandry on the Executive Committee was announced by the Chairman. Prof. Hostetler had asked to be relieved of this responsibility. At the recent Animal Husbandry meeting, H. H. Leveck, of the Mississippi Agricultural Experiment Station, was elected to replace Prof. Hostetler on the Executive Committee.

The membership of the Executive Committee for 1952 is as follows:

C. R. Owen, Louisiana	(1952)
G. B. Killinger, Florida	(1953)
T. H. Rogers, Alabama	(1954) Chairman
R. C. Potts, Texas	(1955)
J. K. Leasure, Tennessee	(1956)
R. H. Lush, Tennessee, Dairy Husbandry	
H. H. Leveck, Mississippi, Animal Husbandry	
P. R. Henson, Maryland, Permanent Secretary	

In the matter of a meeting place for next year, the Chairman pointed out to the group that this Conference group had not met in Oklahoma, Arkansas, Louisiana, South Carolina, Tennessee and Virginia. A letter of invitation to meet in Louisiana in 1952 from Mr. W. G. Taggart, Director of

the Louisiana Agricultural Experiment Station, was read by Mr. Owen. Dr. T. E. Rogers moved that the Louisiana invitation be accepted, and was seconded by J. P. Trimble. The motion passed unanimously.

General discussions: The desirability of having more time for discussions of breeding methods, techniques, etc., similar to that of Tuesday evening, in future meetings of the Conference was generally approved.

A discussion on the occurrence of bloat on improved pastures indicated that instances of bloat are increasing. The feeling seemed to be that the danger of bloat was retarding the acceptance by farmers of more profitable forage and pasture programs, at least in certain areas. It was established in the discussion that a number of the states of the region were conducting investigations into the factors causing bloat. Dr. Potts moved that the group go on record by means of a resolution requesting that a coordinated, research program on bloat be initiated as soon as possible. The motion was seconded and passed unanimously. (The resolution was prepared after the meeting adjourned). The secretary was instructed to send copies of the resolution to each of the Southeastern State Directors, other Technical Committees and to the Director of Agricultural Research of the United States Department of Agriculture.

In the closing minutes of this last meeting, the secretary was instructed to write a letter to Dr. E. V. Smith, Director of the Alabama Agricultural Experiment Station, expressing our appreciation to him and his associates for having planned and conducted a most interesting and successful Southern Pasture and Forage Crops Improvement Conference.

The resolution on bloat was prepared by the Executive Committee after adjournment of the Conference. The approved resolution, sent to the southern directors and others, as instructed, is as follows:

Resolution unanimously adopted by the Southern Pasture and Forage Crop Improvement Conference at Belle Mina, Alabama, on April 19, 1951. Dr. G. B. Killinger, Florida Agricultural Experiment Station, Chairman.

WHEREAS, the recognized economy of forage crops for livestock feed has stimulated increased acreages of improved pastures throughout the nation, especially in the Southeast, and,

WHEREAS, the loss of animals by bloat has increased correspondingly, and,

WHEREAS, this loss of meat, milk, leather and wool reduces both farm income and the supply of these vitally needed products, and,

WHEREAS, the full value of improved grasslands, which is partially offset by the hazards of bloat, cannot be realized with the presence of this menace,

THEREFORE BE IT RESOLVED, that the Southern Pasture and Forage Crop Improvement Conference urgently recommend to the Agricultural Research Administration of the United States Department of Agriculture and to the Directors of the Agricultural Experiment Stations of the Southeastern States, that immediate steps be taken to accelerate and/or expand research leading to the solution of the bloat problem in livestock through a coordinated effort of the appropriate agencies in the Agricultural Research Administration and State Agricultural Experiment Stations.

Registration list of those in attendance at the Eighth Southern
Pasture and Forage Crop Improvement Conference.

Auburn, Alabama
April 17-19, 1951

Allison, J. Lewis	Agric. Expt. Station	Raleigh, N. C.
Ayers, Thomas L.	PMA-ACP	Washington, D. C.
Baxter, Aaron	198 W. Lane	Columbus, Ohio
Beard, D. F.	Plant Industry Station	Beltsville, Md.
Bennett, H. W.	Agric. Expt. Station	State College, Miss.
Blaser, R. E.	" " "	Blacksburg, Va.
Bledsoe, R. W.	" " "	Gainesville, Fla.
Blue, William G.	University of Fla.	" "
Boneta, Efrain	Agric. Expt. Station	Rio Piedras, Puerto Rico
Bowden, O. P.	I.C.I. & R.R. Co.	Firmingham, Ala.
Boyd, Frank E.	Box 120	Montgomery, Ala.
Burton, Glenn W.	Coastal Plain Expt. Sta.	Tifton, Ga.
Cantwell, Rolla S.	412 Candler Bldg.	Atlanta, Ga.
Cardwell, Walter W.	Archer Grain Co.	Houston, Tex.
Cook, E. D.	Agric. Expt. Station	Kirbyville, Tex.
Cope, J. D.	" " "	Auburn, Ala.
Cowart, F. F.	" " "	Griffin, Ga.
Curtis, B. P.	T. C. I.	Birmingham, Ala.
Davis, A. M.	Agric. Expt. Station	Fayetteville, Ark.
DeVane, Earl H.	" " "	Tifton, Ga.
Dobson, Sam	" " "	Raleigh, N. C.
Donnelly, F. D.	" " "	Auburn, Ala.
Elder, W. C.	" " "	Stillwater, Okla.
Elliott, Joe A.	Progressive Farmer	Birmingham, Ala.
Elrod, Julius M.	Agric. Expt. Station	Experiment, Ga.
Evans, E. M.	" " "	Auburn, Ala.
Farris, Nolan F.	Office of Expt. Stations	Washington, D. C.
Gibson, Pryce B.	Agric. Expt. Station	Auburn, Ala.
Gordon, E. S. Sr.		Montgomery, Ala.

Registration List (cont'd)

Gregory, Wade F.	Agric. Expt. Station	Auburn, Ala.
Harbor, D. R.	" " "	" "
Harvey, Clark	" " "	College Station, Tex.
Hawkins, G. E.		Greenwood, S. C.
Hazlewood, Ben P.	Agric. Expt. Station	Jackson, Tenn.
Helms, Clyde, Jr.	" " "	Leesburg, Fla.
Hely, F. W.	" " "	Madison, Wisc.
Henson, P. R.	Plant Industry Station	Beltsville, Md.
Hollowell, E. A.	" " "	" "
Hodges, Elver M.	Range Cattle Station	Ona, Fla.
Horner, Earl S.	Agric. Expt. "	Gainesville, Fla.
Hulburt, Walter C.	Plant Industry "	Beltsville, Md.
Hutton, Curtis, E.	Agric. Expt. "	Jay, Fla.
James, Edwin	" " "	Experiment, Ga.
Johnson, Howard W.	" " "	Stoneville, Miss.
Johnson, Paul E.	Tenn. Valley Authority	Knoxville, Tenn.
Johnson, P. R.	Agric. Expt. Station	Tyler, Tex.
Kelly, Albert O.	ACP Branch, PMA	Washington, D. C.
Killinger, G. B.	Agric. Expt. Station	Gainesville, Fla.
Kornegay, C. L.	" " "	Tallassee, Ala.
Kreitlow, K. W.	Plant Industry Station	Beltsville, Md.
Kuvkendall, Roy	Agric. Expt. Station	Newton, Miss.
Leasure, J. F.	" " "	Knoxville, Tenn.
Lowery, J. C.	" " "	Auburn, Ala.
Lush, R. F.	" " "	Knoxville, Tenn.
McCloud, D. E.	" " "	Gainesville, Fla.
McNalt, Fred L.	Barrett Fertilizer Co.	Clemson, S. C.
Mann, P. B.	American Potash Inst.	Washington, D. C.
Marchant, Warren H.	Agric. Expt. Station	Tifton, Ga.
Mayton, E. L.	" " "	Auburn, Ala.
Morcock, C. J. Jr.	The Barrett Div.	Atlanta, Ga.
Mullett, Bob	3376 Lexington Rd.	Montgomery, Ala.
Naftel, James A.	Agric. Expt. Station	Auburn, Ala.
Neel, L. R.	Southern Agriculturist.	Nashville, Tenn.
Nichols, Bill	Sylacauga Fertilizer Co.	Sylacauga, Ala.
Owen, C. R.	Agric. Expt. Station	Baton Rouge, La.
Park, Joseph R.	" " "	Clemson, S. C.
Parker, Edward M.	" " "	Experiment, Ga.
Parks, R. G.	Plant Industry "	Beltsville, Md.
Patterson, R. M.	Agric. Expt. Station	Auburn, Ala.
Pearson, R. W.	" " "	" "
Peele, T. C.	" " "	Clemson, S. C.
Penn, M. E.	Alabama Power Co.	Firmingham, Ala.
Potts, R. C.	Agric. Expt. Station	College Station, Tex.
Fresley, D. M.	" " "	Tallassee, Ala.
Reed, J. F.	American Potash Inst.	Atlanta, Ga.

Registration List(cont'd)

Richardson, G. L.	Agric. Expt. Station	Lafayette, Ind.
Roard, C. B.	" " "	DeRidder, La.
Rogers, T. H.	A " "	Auburn, Ala.
Roy, Kenneth B.	" " "	" "
Schultz, E. F. Jr.	" " "	" "
Sell, O. E.	" " "	Experiment, Ga.
Simpson, E. W. Jr.		Pendleton, S. C.
Smith, Ralph L.	Agric. Expt. Station	Atmore, Ala.
Stevenson, Gene	Southern Agriculturist	Nashville, Tenn.
Stewart, E. H.	Agric. Expt. Station	Clemson, S. C.
Sturkie, D. G.	" " "	Auburn, Ala.
Stephens, J. L.	" " "	Tifton, Ga.
Stone, Joe W.	The Berry Schools	Mt. Berry, Ga.
Suman, Reynold F.	Forest Service	Tifton, Ga.
Sullivan, F. W. Jr.		Madison, N. J.
Summerour, Charles	P. O. Box 963	Montgomery, Ala.
Trimble, Jim P.	Plant Industry Station	Beltsville, Md.
Tabor, Paul	Soil Conservation Serv.	Spartanburg, S. C.
Wallace, Alvin T.	Agric. Expt. Station	Gainesville, Fla.
Wagner, R. F.	Plant Industry Station	Beltsville, Md.
Wallace, R. W.	Agric. Expt. Station	Monticello, Fla.
Warner, J. D.	" " "	Quincy, Fla.
Weihsing, Ralph M.	" " "	Beaumont, Tex.
Williams, John S.	Univ. of Houston	Houston, Tex.
Williamson, J. T.	Agric. Expt. Station	Auburn, Ala.
Wilson, Clarence M.	" " "	" "
Woodhouse, W. W. Jr.	" " "	Raleigh, N. C.
Woodle, H. A.	" " "	Clemson, S. C.

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